

# Lab Report : 9

**Problem name:** Write a Java program to create a Temperature Converter Application with a Graphical User Interface (GUI).

## **Code :**

```
import java.awt.Color;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import javax.swing.*;

public class LoginS extends JFrame {

    JLabel l1, l2, l3, l4;
    JTextField t1, t2;
    JButton b1, b2;
    JComboBox c1, c2;

    LoginS(String s1) {
        super (s1);
    }
    LoginS() {
    }
    void setComponents() {

        l1= new JLabel("Temperature");
        l2= new JLabel("From");
        l3= new JLabel("Converted value");
        l4= new JLabel("To");
        t1= new JTextField();
        t2= new JTextField();

        String[] temp = {"Celsius", "Fahrenheit", "Kelvin"};
        c1= new JComboBox (temp);
        c2= new JComboBox (temp);

        b1= new JButton("Convert");
        b2= new JButton("Clear");
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setLayout(null);

add(l1);
add(l2);
add(l3);
add(l4);
add(t1);
add(t2);
add(c1);
add(c2);
add(b1);
add(b2);

l1.setBounds(30, 50, 300, 30);
l2.setBounds(300, 50, 100, 30);
l3.setBounds(30, 150, 100, 30);
l4.setBounds(300, 150, 100, 30);
t1.setBounds(30, 80, 150, 30);
t2.setBounds(30, 180, 150, 30);
c1.setBounds(300, 80, 100, 40);
c2.setBounds(300, 180, 100, 40);
b1.setBounds(80, 350, 100, 30);
b2.setBounds(280, 350, 100, 30);

String[] button = {"1", "2", "3", "4", "5", "6", "7", "8", "9",
"0"};
int[][] positions = {
    {100, 400}, {200, 400}, {300, 400},
    {100, 460}, {200, 460}, {300, 460},
    {100, 520}, {200, 520}, {300, 520},
    {200, 580}
};

for (int i = 0; i < button.length; i++) {
    JButton btn= new JButton(button[i]);
    btn.setBounds(positions[i][0], positions[i][1], 50, 50);
    add(btn);

    btn.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            t1.setText(t1.getText() + btn.getText());
        }
    });
    b1.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            convertTemperature();
        }
    });
}

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    }
});
b2.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        t1.setText("");
        t2.setText("");
    }
});
t1.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        convertTemperature();
    }
});
c1.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        convertTemperature();
    }
});

c2.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        convertTemperature();
    }
});
}
}
private void convertTemperature() {
    try {
        String from = (String) c1.getSelectedItem();
        String to = (String) c2.getSelectedItem();
        double inputValue = Double.parseDouble(t1.getText());

        double convertedValue = convert(inputValue, from, to);
        t2.setText(String.format("%.2f", convertedValue));
    } catch (NumberFormatException e) {
        t2.setText("Invalid Input");
    }
}

private double convert(double value, String from, String to) {
    if (from.equals(to)) {
        return value;
    } else if (from.equals("Celsius")) {
        if (to.equals("Fahrenheit")) {
            return (value * 9 / 5) + 32;
        } else if (to.equals("Kelvin")) {

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        return value + 273.15;
    }
} else if (from.equals("Fahrenheit")) {
    if (to.equals("Celsius")) {
        return (value - 32) * 5 / 9;
    } else if (to.equals("Kelvin")) {
        return (value + 459.67) * 5 / 9;
    }
} else if (from.equals("Kelvin")) {
    if (to.equals("Celsius")) {
        return value - 273.15;
    } else if (to.equals("Fahrenheit")) {
        return (value * 9 / 5) - 459.67;
    }
}
return 0;
}

public static void main(String[] args) {
    LoginS s1 = new LoginS("Temp Converter");
    s1.setVisible(true);
    s1.setSize(500, 700);
    s1.setComponents();
    s1.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    s1.getContentPane().setBackground(Color.cyan);
}
}

```

## Output :

